REMARKS/ARGUMENTS

Claims 1-10 were pending in this application when last examined by the Examiner. Claims 1-10 have been cancelled. Claims 11-17 have been added. The amendments find full support in the original specification, claims, and drawings. No new matter has been added. In view of the above amendments and remarks that follow, reconsideration and an early indication of allowance of the now-pending claims 11-17 are respectfully requested.

As an initial matter, the Examiner has refused to consider JP 60-75900 which was submitted with a Supplemental Information Disclosure Statement dated December 12, 2006, because it was not accompanied with an English translation. Applicant submits herewith another Supplemental Information Disclosure Statement with another copy of JP 60-75900 and a partial English translation.

Claims 2 and 5-10 are objected to certain informalities. Applicant submits that the above amendments now overcome the objections. Withdrawal of the objections to claims 2 and 5-10 is respectfully requested.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Stettiner et al. (U.S. Patent No. 4,959,865). Claims 2, 5, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stettiner et al. in view of Iizuka et al. (U.S. Patent No. 6,952,670). Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stettiner et al. in view of Shinta et al. (U.S. Patent No. 5,315,704). Claims 6/4/1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stettiner et al. in view of Junqua (U.S. Patent No. 5,305,422). Claims 6/5/2/1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stettiner et al. in view of Iizuka et al. and further in view of Junqua. Applicant respectfully traverses these rejections.

Claims 1-10 have been canceled in favor of new claims 11-17. Applicant will address the above rejections with respect to claims 11-17.

Independent claim 11 recites a "speech section detection apparatus" that includes a "signal-to-noise ratio improving means including a short-time auto-correlation value calculating means for calculating a short-time auto-correlation value based on a stored speech signal" and a

"speech section extracting signal generating means for generating a speech section extracting signal for extracting a speech section in said speech signal in response to a determination that a level of said short-time auto-correlation value . . . has continued to stay above a predetermined threshold value for a predetermined length of time." Independent claim 11 also recites that the "speech section extracting signal generating means" is characterized by the inclusion of a "root-mean-square value calculating means for calculating a root-mean-square value of said short-time auto-correlation value calculated by said short-time auto-correlation value calculating means; smoothing means for smoothing said root-mean-square value of said short-time auto-correlation value calculated by said root-mean-square value calculating means; and threshold value setting means for setting, as said threshold value, the product of a predetermined factor and said root-mean-square value of said short-time auto-correlation value smoothed by said smoothing means in a non-speech section where said speech section extracting signal does not extract said section." None of the cited references teach or suggest these limitations.

Specifically, in Stettiner, if an attempt is made to detect a speech section based on the auto-correlation value of a speech signal calculated for the detection of a speech section and on a predetermined threshold value, the calculated auto-correlation value of the speech signal oscillates between a positive value and a negative value, and furthermore, the correlation value exhibits a low signal-to-noise ratio at the end as well as the beginning of speech, resulting in an erroneous detection. (See, Col. 4, lines 54-63).
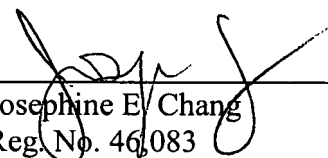
By contrast, in the speech section detection apparatus according to the claimed invention, provisions are made to calculate the root-mean-square value of the calculated short-time auto-correlation value, smooth the thus calculated root-mean-square value, and set as the threshold value the product obtained by multiplying the thus smoothed root-mean-square value of the short-time auto-correlation value by a predetermined factor in a non-speech section. Accordingly, even in situations where the noise level changes from moment to moment or where the signal-to-noise ratio degrades due to environmental conditions, it will be appreciated that the threshold value can be updated as needed. As a result, the speech section in the speech signal can be detected reliably. Accordingly, claim 11 is in condition for allowance.

Claims 12-17 are also in condition for allowance because they depend on an allowable base claim, and for the additional limitations that they contain.

In view of the above amendments and remarks, Applicant respectfully requests reconsideration and an early indication of allowance of the now pending claims 11-17.

Respectfully submitted,

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